

262 opened a vein and drank the blood fresh from the animal.
 884 This proceeding of our voracious young friends was a wise
 though repulsive one, as the blood thus drunk provided the
 salts so necessary in the human economy; for the Masai do
 [263] not partake of any salt in its common form. This sanguinary
 draught concluded, they proceeded to gorge themselves on
 the flesh, eating from morning till night—and keeping their
 cook steadily at work. The half-dozen men were quite able
 to dispose of the entire animal in a few days, and then they
 returned to the kraal to resume the milk diet.

884 If they lived an ascetic life in the matter of food, they
 836 could not be said to do so in other ways. Life in the
 warriors' kraal, as may easily be conceived, was promiscuous
 in a remarkable degree. They may, indeed, be described as
 a colony of free lovers. Curiously enough the "sweetheart"
 system was largely in vogue, though no one confined his or
 her attentions to one only. Each girl, in fact, had several
 sweethearts, and, what is still stranger, this seemed to give
 rise to no jealousies. The most perfect equality prevailed
 between the Ditto and El-moran, and in their savage circum-
 stances it was really pleasant to see how common it was for a
 young girl to wander about the camp with her arm round the
 waist of a stalwart warrior.

884 Till a war-raid was planned, Moran, our interesting
 517 protégé, found he had nothing to do but make acquaintances
 701 and amuse himself with the girls. His cattle were looked
 after by some poor menials, and though the kraal was sta-
 tioned near a dangerous neighbour, yet no fighting took
 place. It was, however, a rule in the warrior kraals that no
 fence for protection was allowed, hence the utmost vigilance
 had to be exercised. Moran thus in the course of his duty
 had frequently to act as watch. At other times he practised
 various military evolutions, and he kept up his muscle by
 the peculiar mode of dancing described in the Taveta chapter.
 Unlike negro tribes, they led what might be called a serious
 life. They had no rollicking fun, no moonlight dancing, no
 lively songs, no thundering drums. No musical instrument
 [533] whatsoever enlivened the Masai life, and their songs were
 [534] entirely confined to such occasions as the return home from
 a successful raid, or the invocation of the deity. As soon as
 darkness fell upon the land the guard was appointed, the
 cattle milked, and everything hushed up in silence.

624 Shortly after joining the kraal, Moran was called upon to
 record his vote in the election of a *Lytunu* and a *Lygonani*.

M (ii) *The Masai.*

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233 The Masai are a pastoral tribe whose sole occupation is the tending of large herds of cattle, sheep and goats. It has been estimated that they have about 25 head of cattle, and twice as many sheep and goats, per head of the population.

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[263] The staple articles of diet are meat, milk, and blood. The blood is drawn from the living animal by puncture of the jugular vein with an arrow. Various roots and barks are used to make infusions which are used either with boiled meat or with milk. The men, while in the "morán," or warrior class, subsist practically entirely on these articles of diet. The rest of the population, in addition to these four items, which form the main part of their food, eat also some bananas, beans, millet, arrowroot, maize, sugar and honey, as these are available. The use of maize, which was introduced only a few years ago, is increasing.

M
[177] For the greater part of the year there is no scarcity of meat, blood and milk, but in periods of severe drought, when, in spite of the large herds, the milk supply is inadequate, the consumption of these vegetable foods is increased, and even the "morán" may be compelled to supplement their meat and milk diet.

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[146] Berries are eaten by the warriors when on safari, i.e., on hunting or fighting expeditions. It appears also to be customary to send the pregnant women into the bush to eat berries. The berries would make an insignificant contribution to the main constituents of the diet, but it is probable that they are of considerable importance as an antiscorbutic addition.

M
[184] One section of the tribe, the Loitokitok, have adopted a frankly mixed diet. It is of interest that pica among the Masai is confined to this section, who use edible earths from various sources with their vegetable foods.

(b) Chemical Composition of Native Foodstuffs, Edible Earths, and Mineral Waters.

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146 The results of the chemical analysis of 153 samples of substances used in the dietary of the two tribes are given in Appendix I. Certain points of interest are discussed below.

(i) Foodstuffs.

In the following table a comparison is made between the analyses of the chief Kenya foodstuffs and analyses of similar products grown in other regions, probably in Europe or America, as quoted by Sherman (1926). All the figures are given as grams per 100 grams dry matter.

						Kenya Maize.	Maize.
Ca	..	..	..	..	..	.005	.011
P	..	..	..	..	..	.41	.32
Na	..	..	..	..	..	.038	.084
Cl	..	..	..	..	..	.05	.058
K	.	..	..	..	..	.42	.48

Ca. in grm. per 100 gm. dry matter in leaves used by :—

Leaves.	Men and women.	Leaves.	Women only.	Leaves.	Women in famine.
Mathoroko	3.74	Marengo	1.74	Kalema	2.61
Terere	2.56	Maboco	3.31	Managu	2.43
Togotia	3.46	Ndoma	2.64	Muyuyu	0.85
Hatha	4.52				
Average	3.57		2.56		1.96

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262 It has been noted, however, that the tendency throughout the reserve is for men to eat much less of the green leaves than the women do. It is stated that in some districts they eat none. A reason given for this, in a reply to the questionnaire from one of the native chiefs, is that " . . . such food prevented them from being swift of foot if defeated in battle by the Masai."

Estimations of manganese were made in some foodstuffs (Appendix I, Table II). The level in white millet and maize was found to be similar to that found in these foods grown elsewhere, but the manganese content of Kenya green leaves was found to be very much higher than that of edible leaves in this country. The following table shows the nature of the differences found (Richards, 1930) :—

Manganese in mgms. per 100 gms. Dry Matter.

Kenya Samples.		Home-grown Samples.	
Red millet	 40.19	Oatmeal	 6.9
White millet	 2.55	Barley ..	 2.01
Green leaves	.. 8.93 to 51.31	Cabbage	 1.50
Average	 30.0	Lettuce ..	 13.30

The manganese content of plant ash used as a salt substitute was also found to be very high, the values for two samples being 418 mg. and 352 mg. per 100 gms.

(ii) Salt Substitutes and Mineral Waters.

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853 The ashes of water plants (Appendix I, Table IV) largely used as salt substitutes by women, especially during pregnancy and lactation, contain significant amounts of calcium and sodium. The average calcium content of seven samples, procured at native markets or in the villages, is 3.4 per cent., and the average sodium content 7.3 per cent. One of the samples analysed stands out from all the others by reason of its high calcium content, which is 10.60 per cent. as compared with values ranging from 1.0 to 1.5 per cent. for the others. This sample was bought at Wandiga's market, and the ash from this market, and that from neighbouring swamps on the Kagumo River, which is probably identical with it, appears to be more in demand than any of the others mentioned in replies to the questionnaire.

TABLE III.—*Green Leaves of Trees and Shrubs.**Percentages in Dry Matter.*

Name of Leaf.	Nitrogen.	Total ash.	Acid sol. ash.	Calcium.	Sodium.	Potassium.	Phosphorus.	Chlorine.
	%	%	%	%	%	%	%	%
Hatha or Hassa, 1 sample ..	5.11	20.47	19.80	4.52	Trace	3.24	0.46	0.42
Kalema Ka Ndia, 1 sample ..	5.73	14.25	13.48	2.61	0.061	2.29	0.41	0.30
Maboco, 1 sample ..	4.56	18.45	17.04	3.31	0.086	4.32	0.52	0.55
Managu, 1 sample ..	5.11	13.71	13.26	2.43	0.148	2.96	0.44	1.95
Marengo—								
Average of 3 samples ..	5.45	24.34	23.16	1.74	0.343	5.20	1.02	0.51
Range ..	4.94-6.47	13.53-29.13	13.20-27.58	1.07-1.91	0.057-1.10	4.51-5.50	0.97-1.19	0.47-0.69
Mathoroko—								
Average of 3 samples ..	4.49	15.81	14.54	3.74	0.056	2.63	0.37	0.30
Range ..	4.36-4.97	14.59-22.79	13.08-21.97	2.74-4.57	0.035-0.114	2.15-3.02	0.27-0.66	0.20-0.61
Muyuyu, 1 sample ..	5.01	25.19	25.16	0.85	0.017	10.64	0.34	0.49
Ndoma, 1 sample ..	5.51	17.52	17.47	2.64	0.095	4.14	0.90	1.24
Terere—								
Average of 4 samples ..	4.29	23.06	22.59	2.56	0.106	5.73	0.70	0.53
Range ..	3.81-4.69	16.55-32.77	16.34-31.97	1.67-3.60	Trace-0.185	3.23-7.74	0.48-1.06	0.38-0.68
Togotia—								
Average of 2 samples ..	5.15	24.62	23.67	3.46	0.166	5.99	0.65	0.64
Range ..	4.91-5.77	17.30-27.57	16.85-26.42	2.95-3.67	0.117-0.187	3.67-6.95	0.43-0.74	0.53-0.90
Average of 18 samples ..	4.92	21.11	20.38	2.66	0.131	5.35	0.63	0.63
Range ..	3.81-6.47	13.53-32.77	13.08-31.97	0.85-4.57	Trace-1.10	2.15-10.64	0.27-1.19	0.20-1.95

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Kikuyu FL10
Kenya FL11

14: Orr & Gilks D-4 (no date) 1931 FL12 Masai FL12

As compared with the other vegetable foodstuffs, the leaves stand out as being high in nitrogen, total and soluble ash, and in calcium, and they are appreciably higher in chlorine. The incorporation of these materials in the mixed cooked foods thus tends to make up for the marked deficiency of calcium, which occurs in all of the simple foodstuffs used by the natives. These calcium figures all appear as high even when compared with the recorded data for such material as alfalfa (1.26 per cent.); red clover (1.07 per cent.) and the highest figure obtained for a highly cultivated British pasture (1.76 per cent.). Three samples of leaves stand out from the remainder, namely, Hatha leaves, and one sample of Mathoroko leaves, with a calcium content of 4.5 per cent. against an average of 2.66 per cent. for the 18 samples, and Muyuyu leaves, which are comparatively low in calcium 0.85 per cent., but exceptionally high in potassium, 10.64 per cent., against an average figure of 5.35 per cent.

TABLE IV.—*Plant Ashes and Extracts.*

Percentages in Dry Matter.				Grams per litre.
	Mararia.	Marura.		Aqueous extract of Itatema root.
	1 sample.	Aver. of six samples.	Range.	
	Per cent.	Per cent.	Per cent.	
Nitrogen ..	0.52	0.16	0.06-0.45	0.05
Total Ash ..	76.51	86.32	57.77-96.19	2.01
Acid Sol. Ash ..	50.22	39.66	26.86-74.93	2.01
Calcium ..	5.23	3.11	1.07-10.60	0.10
Sodium ..	5.09	7.65	3.43-10.27	0.41
Potassium ..	10.47	3.13	1.61-5.34	0.58
Phosphorus ..	1.18	0.92	0.51-1.15	0.02
Chlorine ..	9.62	7.10	3.35-10.89	0.04
Manganese ..	418.0	352.0	—	0.016
(mgrs. per 100 grs.)				

Note.—Under Marura, there is one sample, namely that which was obtained at Wandiga's market, which stands out from all the others with a calcium content of 10.60 per cent. The other five are all of the order 1.0-1.5 per cent.

Two types of plant ash were submitted, namely, Mararia, the ash of a swamp reed, and Marura, the ash of a papyrus plant. The former is considerably richer than the latter in calcium, potassium, and chlorine. One of the samples of Marura ash is very much lower in both sodium and chlorine than the other five, but this is probably due to the fact that the particular sample was by no means so completely burnt as the others. Considerable variations may, therefore, be expected in this type of material, due to the conditions of ashing by the native. These materials will make up to some extent for the low calcium and sodium content of the foodstuffs, if added to them during cooking.

Itatema is a short, reedy, swamp plant and the aqueous extract used by the natives, as supplied, was "an infusion of the entire sod, including adherent earth," and contained 2.83 grs. of total solids per litre.

/32 cont./

512 When the livestock have been driven out of the kraal to pasture,
 [462] the women and children start to clean it. Then the fire is lighted
 [351] in the huts and on it are placed the pots filled with water in which
 [252] the vegetables are to be cooked. These pots (e modl, 'modio') are
 [415] not made by the Masai themselves, but are bought from sedentary
 [439] tribes or also from the Wandoróbo, who presumably learned the
 262 potter's art from them. They are a foot high and globular. In con-
 [241] trast to the warriors, all the occupants of the family kraal, espe-
 262 cially since the cattle epidemics, eat vegetable food which they
 272 buy from the neighboring peoples, since they themselves do not
 [758] engage in any agriculture at all. Their favorite foods, however,
 are, of course, milk, meat, and blood. Milk is always drunk by
 healthy people uncooked, as fresh (en gule) or sour (en gule naoto);
 boiled milk is food for the sick and as such is usually mixed with
 pulverized grains of ol lodoa (Maesa lanceolata). Sheep milk is
 especially popular because of its very high fat content. Blood of
 cattle, sheep, and goats is drunk fresh or eaten in the clotted
 [758] state. Milk mixed with fresh or /33/ cooked blood (en jiwót) is
 greatly appreciated; this drink is highly esteemed as invalid soup
 [234] for the wounded. Cheese making is unknown. Butter is made by
 agitating the cream in a large gourd-bottle (en diagolgol). Fat,
 [252] rendered in a pot, is used as an ingredient in other foods, especially
 [263] meat broth, but is also drunk without any admixture. Meat is
 prepared without adding salt; it is cooked either with various
 spices or roasted on a stick at the open fire. One does not eat in
 [252] one day cooked meat and milk /III. 13 appears here/ together
 [753] (1).
 [263]

[171]

1. This was also forbidden for the Hebrews,
 according to the 2nd Book of Moses 23, 19-34,
 26, passages which are part of the so-called
 Yahwist documents, that is, the oldest sources
 of the Pentateuch.

because the latter together with the ol mokotan spice (bark of

/33 cont./

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C. G. Schillings photo.

III. 13. Women cleaning the kraal.

262 *Albizzia anthelmintica*) always used in the cooking of meat is
272 supposed to cause severe diarrhea. Therefore milk that is offered
[153] is often refused in the hope that a meal of meat will be obtained
• [263] on the same day. One who wishes to partake of both foods in one
day -- and where is there a Masai who could resist an invitation
to a meal of meat?! -- vomits first before eating the meat, for
which he produces the necessary stimulus by means of a blade of
grass stuck in the throat. If one has eaten cooked meat today,
then /34/ one first drinks some blood in the morning before the
milk, not out of considerations of health, but rather because it is
believed that the livestock would give less milk as a consequence
[231] of neglecting this custom. Bringing milk into contact with meat
is most scrupulously avoided, because, according to the general
view, through that the udder of the cow from whom that milk
came would become permanently diseased. For this reason the

/34 cont./

262 Masai only most reluctantly and infrequently sell cow's milk, for
 272 the buyer indeed could in the above-mentioned manner make their
 cows sick with it. The Masai scorn any kind of game meat, as
 [136] well as birds and even fish, of the latter of which species of *Barbus*,
Chromis, *Clarias*, and the sheatfish-like *Synodontis* occur almost
 everywhere in larger brooks.

252 The preparation of the principal vegetables is the following:
 262 batatas (*ol murungu*, *el murunguni* -- *Ipomoea batatas*) are cooked
 • 263 in water with a little steppe salt (*e munjan*), then drained, mashed
 with a whisk (*ol gibere*, *el giberen*), and stirred with fresh milk.
 The finished dish is called *el murunguni*. Unripe bananas (*ol*
marigol, *el marigo* -- *Musa paradisiaca*) are peeled, cut up, and
 cooked in water with salt. After they have been drained, a little
 butter (*en gorno*) is added. Unripe dried bananas (*ol kitauo*, *el*
kitauon) are cooked in water, drained, and then stirred with milk
 and butter. Maize kernels (*ol balegi*, *el baleg*) are cooked in
 water without the addition of salt. Beans are cooked with salt. One
 distinguishes *ol bombol* -- *el bombo* (*Dolichos lablab*), *en giu* -- *en*
giun (with which both *Cajanus indicus* and *Vigna sinensis* are desig-
 nated), furthermore *es sigoriol* -- *es sigorio* (*Phaseolus vulgaris*),
ol gamuri -- *el gamuri* (*Phaseolus radiatus*). Eleusine *coracana*
 (*en dabá* -- '*n dabán*, or *en driga* -- '*n drigán* or also called *en*
guruma -- '*n guruman*) and *Sorghum vulgare* (*ol birirf* -- *el*
birirfn) are cooked to a thick porridge and lightly salted. *Dioscorea*
abessynica (*ol geré* -- *el gerén*) and *Colocasia antiquorum* (which
 the Masai on Kilimandscharo designate with the Dschagga /Chagga/
 word *maduma*) are cooked in salted water.

276 Honey (*en aicho* -- '*n aichi*) is eaten unmixed and is also
 [439] used as an addition to various medicaments. They buy tobacco
 (*ol gumbau*, *Nicotiana rustica*), which the Masai
 consume in quantities, from sedentary Negroes,
 who put it on the market in loose, bast-wrapped
 packets (Fig. 4) of various sizes or in the shape
 of solid balls about five centimeters in diameter.
 [415] For the preparation of this, the tobacco leaves,
 → picked ripe, are tightly packed, tied up with



Fig. 4.

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[264] /93 cont./
forest meal (1).

1. Ol bul or, if an en dorosi has taken place, ol bul en dorosi, or, in short for that, en dorosi, with which the present-day language also designates every forest meal prior to a war expedition.

in order to strengthen yourselves. Then you will set out for war on the day ol gadet. On the following day, ol ondjori, you will pass an old camping place. Then, before you reach your camp, you will meet a single Kahe boy. Do not kill him, but bring him to me; otherwise you would be defeated. On the ol onjugi day you will

726 fight and conquer, etc. etc." If something does not fit in, it is due
714 to the carelessness or mistakes of the warriors. Furthermore, for the
791 spies sent ahead of the expedition, the ol oiboni gives them a few
789 amulets (e mascho ol oiboni), which



Fig. 19. 7/5

make their wearers invisible. The amulets contain one of his magic remedies and are tied around the wrist or to the spear or shield. Another war medicine consists of a mixture whose chief ingredient is snake eggs (mosor ol assurai). A large leg-bell (ol dualla kitok, Fig. 19) is filled with the medicine. In war it is tied to a club and hurled at the enemy

offering resistance, so that he will flee, or it is tossed into his herd in order to drive apart the livestock, which then is caught by the Masa1. In order to have the expected effect, it is desirable that the medicine be hurled by a left-handed warrior. The speakers convey the chief's answer to the warriors, who have most impatiently awaited their return. Hastily they prepare themselves for the forest meal; weapons, pots, and the livestock needed are gathered together, and two by two the es sirit set out together for the nearest bush. Whereas in the ordinary meat meals only relatively few spices are used, for the en dorosi in particular all the many vegetable agents that the

726

• [263]
[296]

/93 cont./

Masai know for stimulating the nerves find use. Their effect will be discussed in a later section (3).

2. cf. XIX. Nerve Alimentum the em bochona sickness.

If the opponent is particularly strong, a forest meal sometimes lasts a whole month by order of the oj oiboni.

/94/ During this the boys pose as lords in the warrior kraal, but the girls bravely defend themselves with sticks. Every day in connection with their dances the girls sing songs of prayer: May Ng ai make the warriors strong and strongest of all the on sandja, etc. The mothers, on the other hand, pray silently in their huts for the same purpose.

Still in the forest the El moran put their weapons, ornaments, and clothing in order. Upon their return from the meat meal they remain only a few hours in the kraal, in order to fetch something forgotten and to take along livestock as travel provisions. Here a few fathers and mothers have already appeared in order to call down



Ill. 36. Consultation on the war expedition.

/183 cont./

757

For gonorrhea they use a whole number of medicaments, to some of which they attribute only or chiefly a diuretic effect, to others a healing effect as well. The principal remedies are the following: decoction of the bark of ol jani 'ajugi (Embellia kilimandscharica), often mixed with calf urine; furthermore of ol sagaram (Bauhinia reticulata), ol dabani (Acacia cf. vauregia Schwth.), ol mubutan (Albizia anthelmintica) and ol gilai (?); a root decoction of the latter is also used, as well as of ol urondo (Cleome senegalensis Gilg), ol anamisi (Cordia tomentosa Engl.), ol danyine, and, finally, decoctions of the dried root bark of o'remit (Salvadora peruvica) and of the wood of a Sim species (ol masigile keta), which is regarded especially as a diuretic.

[64]

/184/ For cystic catarrh one drinks a weak decoction of the root of o'remit (Salvadora peruvica).

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A bark decoction of ol dimig'omoni (Pappas capensis) is regarded as an aphrodisiac for men, one made out of ol mubutan (Albizia anthelmintica) for women. The bark of the tree of ol gilviti (Acacia thymifolia) and ol kitang, used as seasoning for meat broth, is supposed to have the opposite effect among the warriors.

• [263]

These last two remedies, however, are by no means regarded as sedatives, but, on the contrary, as stimulants. The people explain the effect ascribed to them here with the words: the warrior does not like the odor of the girl, by which probably a specific lower urine /wink of urine/ more or less clinging to the clothing of all women is to be understood.

[147]

Nerve Allments

757
[64]

With headache (ndig ga ol opunja) a blister is produced on each of the temples and on the nape with the fire twister (ol biyaji) rubbed hot; more rarely one ties a cord rather tightly around the forehead and the occiput. The latter remedy is not peculiar to the Masai, but has been adopted in places from other peoples.

[77]

[64]

For earache (ndig ga ol gila) one pours warm butter into the ear.